

ON ACANTHOPLEURA AND ITS SUBGENERA.

BY H. A. PILSBRY.

In studying the species of this abundant group of Chitons, the writer found the scheme of subgenera adopted by the late Dr. Carpenter and published by Dall¹ to be in several respects both insufficient and faulty. These defects are partly due to the fact that Carpenter's studies on this portion of the Chitons were left incomplete by his untimely death, and partly to his rather lax usage in questions of nomenclature.

Acanthopleura, as a whole, is much more closely allied to *Tonicia* than to any other genus. It has no close alliance with the other genera grouped by Carpenter in "Acanthoidea." It agrees with *Tonicia* in having certain areas on the valves studded with minute eyes, which possess a crystalline lens, and are not especially different from lower mollusk eyes generally. *Acanthopleura* differs from *Tonicia* in having these eyes scattered about the bases of the tubercles on the shell, instead of being arranged in radiating series as in *Tonicia*. The eyes are visible under a good hand lens as minute shining black sunken dots or transparent jewel-like raised drops.

Carpenter supposed the West Indian species, *Ch. piceus*, to be the type of *Acanthopleura*; but in Guilding's original paper no species of that group of forms is mentioned by name. A critical review of the subject compels us to accept *Ch. spinosus* Brug. as the type of *Acanthopleura*. The subgenera will stand as follows:

(1) *Acanthopleura* Guild., (restricted.)

Valves somewhat immersed; posterior valve having a very long insertion-plate, cut into numerous teeth by short slits; intermediate valves with one or two slits; sinus smooth; girdle covered with long spines. Type *Ch. spinosus* Brug. *Francisia* Cpr. is a synonym.

The immersion of the valves gives the tail-valve, when detached, the appearance of that of *Katherina tunicata*.

(2) *Maugeria* Gray, (restricted.)

Posterior valve having the pectinated insertion plate, cut into numerous teeth by slits similar to those of the head-valve. Median

¹ Proc. U. S. Nat. Mus. 1881, p. 284.

valves 1-slit; *sinus smooth*, not toothed; girdle densely, closely clothed with short calcareous spinelets. Type *Ch. piceus*, of West Indian coasts. This group is *Acanthopleura* of Cpr., not Guilding.

(3) *Amphitomura* (s. g. nov.)

Posterior valve having the insertion-plate very short, with blunt, crenulated edge, interrupted only by a *single mopaloid slit on each side*; median valves 1-slit; *sinus smooth*; girdle as in s. g. *Maugeria*. Type *Ch. borbonicus* Desh. The tail-valve alone differs from *Maugeria*, but this character is so significant and so strongly developed that the necessity of separating the two subgenera is obvious.

(4) *Mesotomura* (n. nov.)

Posterior valve having the long insertion plate deeply pectinated outside, its edge interrupted only by a *single median-posterior slit*; median valves 1-slit; *sinus denticulate*; girdle sparsely set with spike-like spines. Type *C. echinatum* Barnes. *Corephium* Gray, 1847, not Browne, 1827, is a synonym.

Mention should be made of the curious fact that Gould's *Ch. incanus* and the similar Japanese species *C. japonicus* Lischke, have been by all authors referred to *Acanthopleura*. An examination shows them to differ wholly in the characters of the tail-valve, the *incanus*, etc., having a smooth crescentic callus in place of the insertion-teeth. It therefore belongs in the immediate vicinity of *Onithochiton*, from which it differs in the spiny girdle and rough exterior. The group may be called LIOLOPHURA, *Ch. japonicus* being the type.

A NEW TROCHID FROM JAPAN.

BY H. A. PILSBRY.

Calliostoma Crumpii, n. sp. (pl. I, fig. 3.)

Shell closely resembling *C. argenteonitens* Lischke (Manual of Conchology xi, pl. 63, fig. 32) in contour, color and texture. Differing from that species in the more convex whorls of the spire, the deeply channelled suture, and in sculpture. The body-whorl is rounded, and has a girdle of prominent tubercles at the periphery;